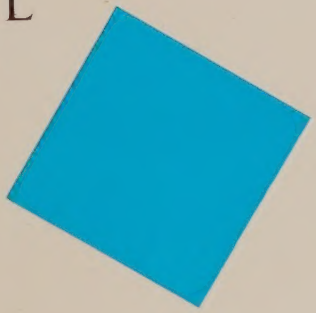
SERIAL / PARALLEL INTERFACE CARD USER'S MANUAL



SERIAL / PARALLEL INTERFACE CARD USER'S MANUAL

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1. GENERAL DESCRIPTION

The Serial/Parallel Adapter provides one parallel printer port and two serial port for the IBM personal computer PC/AT family.

The serial portion (ACE) of the CIC83747 performs serial-to-parallel conversion on data characters received from a peripheral device or a MODEM, and parallel-to-serial conversion on data characters received from the CPU. The CPU can read the complete status of the ACE at any time during the functional operation. The parallel portion of the CIC 83747 is specifically designed to attach printers, but it can be used as a general input/output port for any device or application that matches its input/output capabilities.

The adapter can be expanded to a second serial port. A programmable baud rate generator allows operation from 50 baud to 9600 baud. 5-8 Data bit with 1, 1½ or 2 stop bits are supported.

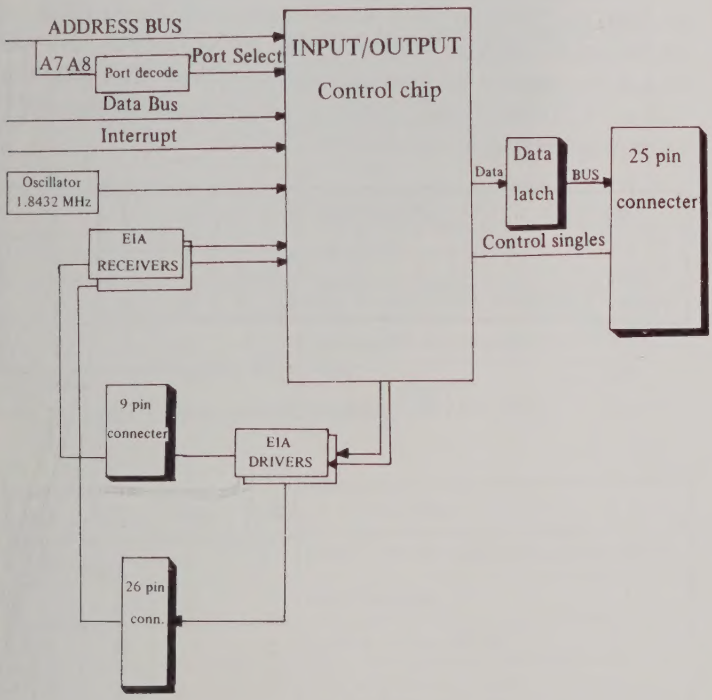
The connector J2 for the serial port is mounted at the rear of the board and has an IBM expansion slot panel mounted to it that replaces the installed blank panel.

The connection for the optional second serial port J1 is made at a 13 pin deal row connector located adjacent to the first connector. One 26 pin-to-25 pin female D type connector adapter cable is need to provide a standard RS-232 connection point.

2. FEATURES

* Provides Two Asynchronous Communications Elements (ACE1 And ACE2)
  ** Adds Or Deletes Standard Asynchronous Communication Bits To Or From Serial Data Stream.
  ** Provides Full Double Buffering.
  ** Independently Controlled Transmit, Receive, Line Status, And Data Set Interrupts.
  ** Provides A Programmable Baud-Rate Generator.
  ** Provides MODEM Control Functions.
  ** Fully Programmable Serial-Interface Characteristics.
  ** Complete Status Reporting Capabilities.
  ** Internal Diagnostic Capabilities.
  ** Fully Prioritized Interrupt System Controls.
* Provides One Parallel Ports To Attach Printers.
  (but provides two addresses Decode).

3. SERIAL/PARALLEL PORTION BLOCK DIAGRAM



4. ADDRESS DECODER

When the chip is selected. The A7 and A8 are used to provide the internal chip select signals for controlling the ACE1, ACE2, Printer Interface. The A0, A1 and A2 are used to select a register for read or write operation. The following Table 1. Table 2 and Table 3 are decoded listings of the outputs generated by the Address Decoder.

Operation	CS1	CS2	CS3	CS4	CS5	A7	A8
ACE1	1	1	1	1	0	1	1
ACE2	1	1	1	1	0	1	0
Printer Interface	1	1	1	1	0	0	1

Table 1

DLAB	A2	A1	A0	Register
0	0	0	0	Receiver Buffer (read)
				Transmitter Holding Register (write)
0	0	0	1	Interrupt Enable
x	0	1	0	Interrupt Identification (read only)
x	0	0	1	Line Control
x	1	0	0	MODEM Control
x	1	0	1	Line Status
x	1	1	0	MODEM Status
x	1	1	1	Scratch
1	0	0	0	Divisor Latch (least significant byte)
1	0	0	1	Divisor Latch (most significant byte)

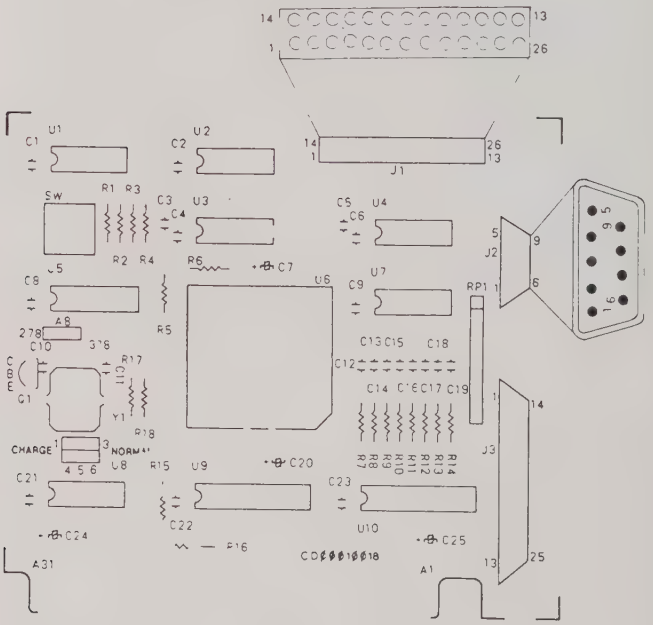
Table 2. Definition of Register Codes for ACE

A0	A1	IOR	IOW	Operation
0	0	1	0	DLE1,2 Pin (For External Data Latch)
0	0	0	1	Data Swapper
1	0	0	1	Printer Status Buffer
0	1	1	0	Printer Control Latch
0	1	0	1	Printer Control Swapper

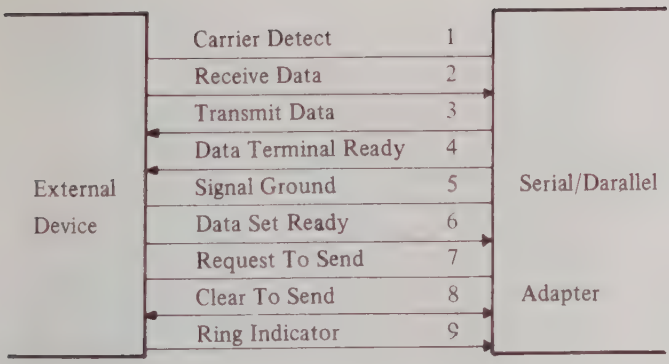
Table 3. Definition of Register Codes for Printer Interface Logic.

5. PIN ASSIGNMENT FOR SERIAL PORT

The following figure shows the pin assignment for the serial port in a communication environment.



SILK SCREEN



Serial port pin hassignment

Serial Port Configuration

Port Configuration	I/O Port Address	Interrupt Control
COM 1	3F8-3FF hex	IRQ 4
COM 2	2F8-2FF hex	IRQ 3

Serial I/O pin discription

Pin Name	Pin No (J1) COM 2	Pin No (J2) COM 1
DCD	8	1
RX	3	2
TX	2	3
DTR	20	4
GND	7	5
DSR	6	6
RTS	4	7
CTS	5	8
RI	22	9

Controller Specifications

The following describes the function of CIC 83747 controller input/output signals.

Input Signals

-Clear to Send; (-CTS), Pin 10, 26 The '-CTS' signal is a modem-control function input, the condition of which can be tested by the processor by reading bit 4 (CTS) of the modem status register. Bit 0 (DCTS) of the modem state since the previous reading.

Note: Whenever the CTS bit of the modem status register changes state, an interrupt is generated if the modem-status interrupt is enabled.

-Data Set Ready: (-DSR), Pin 9, 27 – When low, indicates the modem or data set is ready to establish the communications link and transfer data with the controller. The '-DSR' signal is a modem-control function input, the condition of which can be tested by the processor reading bit 5 (DSR) of the modem status register. Bit 1 (DDSR) of the modem status register indicates if the '-DSR' input has changed since the previous reading.

Note: Whenever the DSR bit of the modem status register changes state, an interrupt is generated if the modem-status interrupt is enabled.

-Data Carrier Detect: (-DCD), Pin 8, 28 When low, indicates the modem or data set detected a data carrier. The '-DCD' signal is a modem-control function input, the condition of which can be tested by the processor reading bit 7

(DCD) of the modem status register. Bit 3 (DCD) of the modem status register indicates if the '-DCD' input has changed state since the previous reading.

Note: Whenever the DCD bit of the modem status register changes state, an interrupt is generated if the modem status interrupt is enabled.

-Ring Indicator: (-RI), Pin 7, 29 – When low, indicates the modem or data set detected a telephone ringing signal. The '-RI' signal is a modem-control function input, the condition of which can betested by the processor reading bit 6 (RI) of the modem status register. Bit 2 (TERI) of the modem status register indicates if the '-RI' input has changed from an active to an inactive state since the previous reading.

Note: Whenever the RI bit of the modem status register changes from an inactive to an active state, an interrupt is generated if the modem-status interrupt is enabled.

VCC Pin 35, 1 +5 Vdc supply

VSS Pin 18, 52 – Ground (0 Vdc) reference

Output Signals

-Data Terminal Ready: (-DTR), Pin 11, 25 When active, informs the modem or data set that the controller is ready to communicate. The 'DTR' output signal can be set to an active level by programming bit 0 (DTR) of the modem control register to an active level. The '-DTR' signal is set inactive upon a master reset operation.

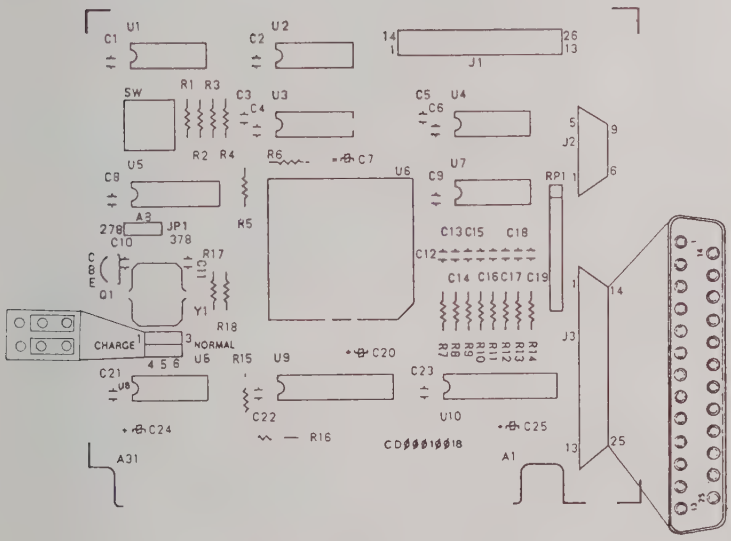
-Request to Send: (-RTS), Pin 12, 24 – When active, informs the modem or data set that t the controller is ready to send data. The '-RTS' output signal can be set to an active level by programming bit 1 (RTS) of the modem control register to an active level. The '-RTS' signal is set inactive upon a master reset operation.

-Output 1: (-OUT 1), Pin 14 – User-designated output that can be set to an active level by programming bit 2 (-OUT 1) of the modem control register to an inactive level. The '-OUT 1' signal is set inactive upon a master reset operation. Pin 14 is connected to an active source.

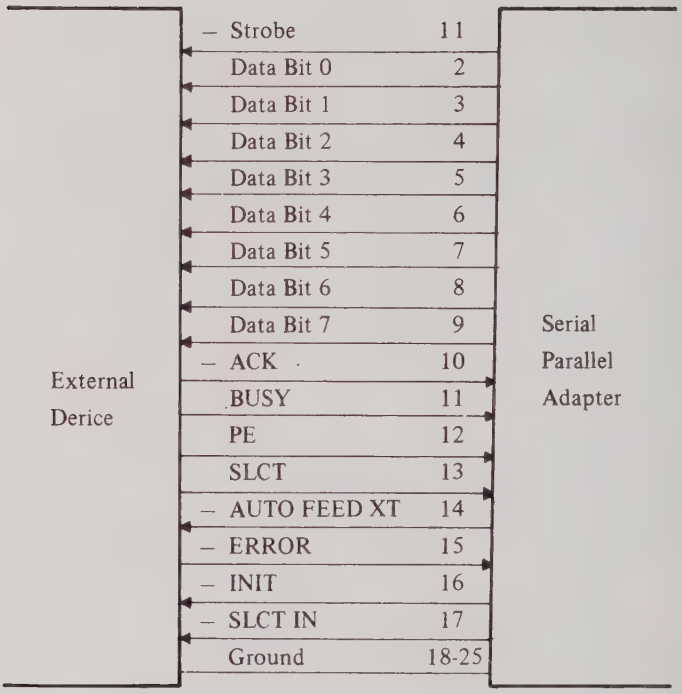
-Output 2: (-OUT 2), Pin 22 – User-designated output that can be set, to an active level by programming bit 3 (-OUT 2) of the modem control register to an inactive level. The '-OUT 2' signal is set inactive upon a master reset operation. Pin 22 controls interrupts to the system.

6. PIN ASSIGNMENT FOR PARALLEL PORT

The adapter has a 25 pin D-shell connector at the rear of the adapter. The following figure shows the singles and their pin assignment. Typical printer input singles also are shown.



SILK SCREEN



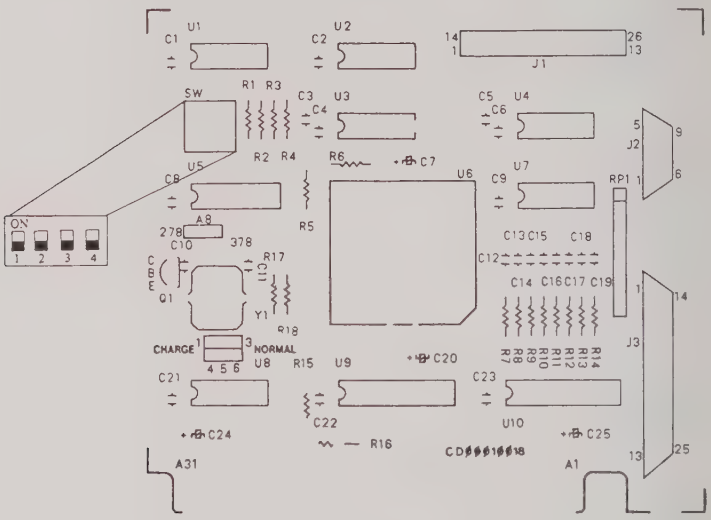
Parallel Port Configuration

port configuration	I/O Port Address	Interrupt Control
LPT2	378-37A hex	IRQ 7
LPT3	278-27A hex	IRQ 7

Parallel printer I/O pins discription

Pin Name	Pin No. (J3)	IBM Matrix Printer
– STROBE	1	1
D0	2	2
D1	3	3
D2	4	4
D3	5	5
D4	6	6
D5	7	7
D6	8	8
D7	9	9
– ACK	10	10
BUSY	11	11
PE	12	12
SLCT	13	13
– AUTO FEED	14	14
– ERROR	15	15
– INIT	16	16
– SLCT IN	17	17
GROUND	(18-25)	(16,19-30,33)

7. HOW TO SELECT THE 2 SERIAL/1 PARALLE PORT.



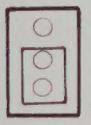
SILK SCREEN

DIP SW1: COM 1
DIP SW2: PRT 1
DIP SW3: COM 2
DIP SW4: NO USE

The user can disable any other port, only change the DIP SWITCH on/off position.

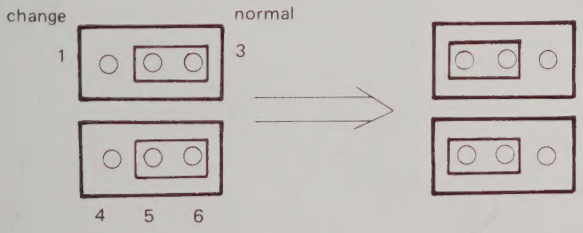
PRINTER PORT SELECT JUMP SET UP

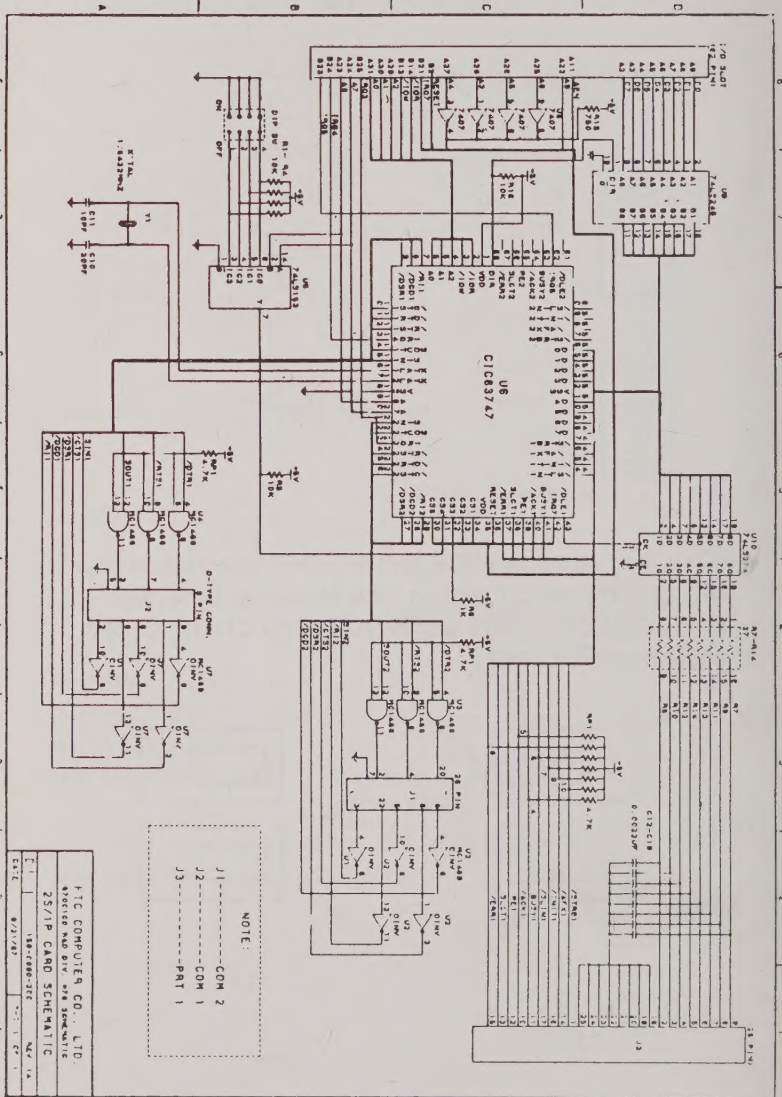
select LPT1



select LPT2

When you chose hex/278 printer ports, you should have change IRQ Jump function, like following state, and original RS232 COM1 will exchange for COM2, COM2 exchanges for COM1.




I/O SLOT
CIC8374?
U6
NOTE:
J1----------COM 2
J2----------COM 1
J3----------PRT 1
PTC COMPUTER CO., LTD.
2S/1P CARD SCHEMATIC